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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/658,236 | 09/08/2003 | Gang Yu | UC0013 US NA | 4110 |

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LEGAL PATENT RECORDS CENTER
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WILMINGTON, DE 19805

| EXAMINER |
|---|
| SANTIAGO, MARICELI |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2879 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 11/15/2007 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-Legal.PRC@usa.dupont.com

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/658,236 | YU ET AL. | |
| | Examiner | Art Unit | |
| | Mariceli Santiago | 2879 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *23 August 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,3,5,6,9-13 and 19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5,6,9-13 and 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Amendment*

The Amendment, filed on August 23, 2007, has been entered and acknowledged by the Examiner.

Cancellation of claims 2, 4, 7, 8 and 14-18 has been entered.

Claims 1, 3, 5, 6, 9-13 and 19 are pending in the instant application.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3, 5, 6, 9-13 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ko (US 6,876,018).

Regarding claim 1, Ko discloses an organic electronic device comprising a first electrode (34, Fig. 4; 52, Fig. 6), a second electrode (38, Fig. 4; 56, Fig. 6) and an organic active layer (36, Fig. 4; 60, Fig. 6), wherein the first electrode lies on a opposite side of the organic active layer, compared to the second electrode, and at least one layer selected from the first electrode, the second electrode, a hole-transport layer, an electron-transport layer and the organic active having a thickness adjusted to achieve reduced $L_{background}$ (Column 2, lines 28-38). Ko fails to explicitly state that the reduced $L_{background}$ is 30% or less of incident ambient light, however, Ko discloses the adjustment (i.e., the optimization) of the thickness of the organic layer and/or the transparent electrode in order to achieve a desired reduced ambient-light reflection, thus

providing for a low $L_{background}$ (Column 2, lines 28-38). Accordingly, it is considered within the capabilities of one skilled in the art to optimize prior art conditions (i.e., the corresponding layers thicknesses within the display panel) in order to obtain a result-effective value (i.e., a $L_{background}$ within the claimed values) as an obvious matter of design engineering in view of Ko's teachings. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to optimize the corresponding layers thicknesses within the display panel as taught by Ko to achieve a $L_{background}$ within the claimed values, since optimization of prior art conditions is considered within the capabilities of one skilled in the art.

Regarding claim 5, Ko discloses an organic electronic device comprising an organic active layer, and a first electrode having a side opposite the organic active layer, wherein the first electrode comprises a first electrode layer lying at the side opposite the organic active layer and the first electrode layer has a thickness adjusted to achieve reduced $L_{background}$ (Column 2, lines 28-38). Ko fails to explicitly state that the reduced $L_{background}$ is 30% or less of incident ambient light, however, Ko discloses the adjustment (i.e., the optimization) of the thickness of the organic layer and/or the transparent electrode in order to achieve a desired reduced ambient-light reflection, thus providing for a low $L_{background}$ (Column 2, lines 28-38). Accordingly, it is considered within the capabilities of one skilled in the art to optimize prior art conditions (i.e., the corresponding layers thicknesses within the display panel) in order to obtain a result-effective value (i.e., a $L_{background}$ within the claimed values) as an obvious matter of design engineering in view of Ko's teachings. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to optimize the corresponding layers thicknesses within the display panel as taught by Ko to achieve a $L_{background}$ within the claimed values, since optimization of prior art conditions is considered within the capabilities of one skilled in the art.

Regarding claims 3, 9 and 10, the claim states equations to determine the thickness of a first and a second layer (claims 3 and 9), and an equation to determine the interfacial reflectivity (claim 10). It is noticed that,"Phenomena of nature, though just discovered, mental processes, abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work." *Benson*, 409 U.S. at 67, 175 USPQ at 675. Ko's disclosed element layers of the organic electronic device inherently comprise the variables require to determine a thickness of a given layer (i.e., refractive index, angle of incident radiation, total phase change, and wavelength) and the interfacial reflectivity. Moreover, since no numerical range defining the thickness value is claimed, Ko's teachings meet the claimed limitation of a thickness range that could be determined by the claimed equations.

Regarding claim 6, Ko discloses an organic electronic device further comprising a second electrode (56, Fig. 6), wherein the organic active layer lies between the first electrode and the second electrode, a second electrode has a side opposite the organic active layer, and the second electrode comprises a second layer lying at the side opposite the organic active layer, and wherein the second electrode layer has a thickness adjusted to achieve reduced $L_{background}$ (Column 2, lines 28-38). Ko fails to explicitly state that the reduced $L_{background}$ is 30% or less of incident ambient light, however, Ko discloses the adjustment (i.e., the optimization) of the thickness the second transparent electrode in order to achieve a desired reduced ambient-light reflection, thus providing for a low $L_{background}$ (Column 2, lines 28-38). Accordingly, it is considered within the capabilities of one skilled in the art to optimize prior art conditions (i.e., the corresponding layers thicknesses within the display panel) in order to obtain a result-effective value (i.e., a $L_{background}$ within the claimed values) as an obvious matter of design engineering in view of Ko's teachings. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to optimize the corresponding layers thicknesses within

the display panel as taught by Ko to achieve a $L_{background}$ within the claimed values, since optimization of prior art conditions is considered within the capabilities of one skilled in the art. Moreover, Ko discloses the second electrode made of ITO or IZO transparent material, accounting for a minimum ambient light reflection from the second electrode, thus, providing for a low $L_{background}$.

Regarding claims 11-13, Ko discloses an organic electronic device wherein the first electrode layer comprises a metal selected from a transition metal and an elemental metal (34, Column 3, lines 25-29; 52, Column 4, lines 25-35), wherein the metal is selected from a group consisting of Au, Cr, Si and Ta (52, Column 4, lines 25-35), and wherein the first electrode layer further comprises a oxide of the metal (34, Column 3, lines 25-29).

Regarding claim 19, Ko discloses an organic electronic device wherein the electronic device is a light-emitting display.

## *Response to Arguments*

Applicant's arguments with respect to claims 1, 3, 5, 6, 9-13 and 19 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's contention that the prior art reference to Ko (US 6,876,018) does not present a precise, predictive determination of thickness values, or ranges of values, for at least one of the first electrode, the second electrode, the hole-transport layer, the electron-transport layer, and the organic active layer is not found persuasive. In the instant case, patentability of the product claim does not rely in a precise or predictive determination of the thickness value (which is considered an intermediate manufacture step), but in its structural difference over the prior art of record. Ko discloses substantially the same structural components as claimed in the instant application, and further teaches adjusting the layers thicknesses within the display panel to

reduce ambient-light reflection. It is considered within the capabilities of one skilled in the art the optimization of prior art conditions (i.e., the corresponding layers thicknesses within the display panel) in order to obtain a result-effective value (i.e., a $L_{background}$ within the claimed values). Accordingly, the structural limitations and the corresponding property claimed in the instant application are considered to be obvious over the Ko's teachings.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (571) 272-2464. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mariceli Santiago
Primary Examiner
Art Unit 2879